METHOD AND APPARATUS FOR PLAYING A BETTING GAME
INCLUDING INCORPORATING SIDE BETTING WHICH
MAY BE SELECTED BY A GAME PLAYER

5   This application is a continuation-in-part of co-pending application Serial No. 08/391,051, now U.S. Patent No. 5,570,885 filed February 21, 1995, entitled Electronic Gaming System for Multiple Play Wagering.

FIELD OF THE INVENTION

10   The present invention relates to a method and apparatus for playing a betting game and more particularly to novel method and apparatus for playing a betting game having integrated thereto a side bet capability for increasing the betting possibilities and enhancing player interest.

15 ## BACKGROUND OF THE INVENTION

     As is described in detail in co-pending U.S. application Serial No. 08/391,051, integration of a side bet capability into conventional betting games adds a totally new dimension to such games
20   which, among other advantages includes the capability of providing a larger selection of possible bets as well as significantly increasing the interest of each game played and the newly created relationship of a consecutive number of wins
25   as a result of the selected side bet which increases the interest of all players at a table, even though some of the players have not chosen to make such a side bet. The nature of the side bet also acts as an inducement to continue play at a given table or
30   slot machine, if the relevant casino requires the player to make the conventional bet before the side

bet is allowed.   The relevant casino has either option.

BRIEF DESCRIPTION OF THE INVENTION

The present invention is characterized by comprising method and apparatus for integrating a side bet capability into wagering games typically played at casinos and other legal gambling establishments throughout the world.

In one preferred embodiment, side betting is provided in a blackjack game comprised of a blackjack table which accommodates a dealer and a plurality of players. Each player position is provided with a chip receptacle and a key operated, microprocessor-based display. Each player, in addition to making a conventional bet prior to the play of new game, may place one or more chips in a chip receptacle provided at the player's location. Sensors under control of the microprocessor detect the presence and denominations of the chip or chips placed in the receptacle and, together with the number of consecutive wins selected by the player, displays a payoff amount, amount bet, consecutive win number selected and number of consecutive wins attained by each player.

The play begins when the dealer presses a dealer-operated begin game button which automatically covers and seals the chip receptacle while enabling the viewing of the chips through the transparent cover.

Each new game is played in the conventional "21" manner. When the game in play terminates, the dealer establishes each of the players at the table as winning or losing or tying

the dealer's hand. The side bet chips bet by losing players are taken by the dealer either when a player exceeds 21 or when the dealer's total is closer to 21 than the player's. In the event that a player participating in a consecutive win side bet loses a game, the dealer, prior to taking that player's uncovered chips from the table, presses a Loss button on the player's display panel which, in addition to terminating the consecutive win side bet, uncovers the side bet chip receptacle and lifts the chip (or chips) out of the receptacle to facilitate their removal. Once the Loss button is pressed, the displays in front of the relevant player are turned off. The number of consecutive wins presented in a winning player's display participating in a consecutive win side bet is advanced when the dealer presses the game begin button to initiate play of the next hand, unless the dealer has pressed the Push button (player-dealer tie) or the Loss button.

At the option of the relevant casino, the game may include a rule that the player wins if the total of his cards equals the final total of the dealer's cards (i.e. a Push). The Push button will be removed and the payoffs of consecutive wins will be lower than the side bet when neither player or dealer wins with cards of the same total. The lower payoff will incorporate the statistical advantage given to the player when he wins on a "Push".

The side bet chip receptacle remains covered until the occurrence of either a lost hand before the number of consecutive wins selected is achieved or the number of consecutive wins is achieved. The cover prevents the bet from being changed and provides a constant reminder of the

consecutive wins side bet as each successive hand is played, regardless of the number of consecutive wins selected by the player. The receptacle cover is transparent to permit easy viewing of the chips in the chip receptacle. The individual microprocessor at each player location automatically locks out the keyboard when the play of the first game following the selection of the consecutive win side bet begins. No change can be made in the number of consecutive wins selected until the player either achieves the number of consecutive wins or has failed to achieve the number of consecutive wins due to a loss of a hand prior to achieving the selected number of consecutive wins.

In other embodiments, the side bet apparatus is integrated into the playing table and/or apparatus. For example, in slot machine embodiments playing video poker, video roulette, video 5-card stud, video low ball poker, video craps, video baccarat, etc. or in slot machines which randomly present one or more sets of three symbols, such as fruit, the key operated display may either be adjacent to or integrated into the slot machine housing for selection of the number of consecutive wins. The slot machine sensors, sense deposit of a coin or coins for the side bet, in addition to the deposit of a coin or coins for a single play. The sensor cooperates with the microprocessor to display the payoff amount selected by the player in the event that the player achieves the selected number of consecutive wins.

The machine, upon completion of a game, automatically terminates the consecutive wins side bet in the event that a loss occurs before achieving the number of consecutive wins. Each time a new

game is initiated and, assuming that there has been no intervening game which the player has lost, the number of consecutive wins displayed is incremented by one, the constant updating apprising the player of his progress during the side bet period.

In casinos permitting a consecutive wins bet to be made without betting on a hand, the "side bet" becomes the only bet.

OBJECTS OF THE INVENTION

It is therefore one object of the present invention to provide a novel method and apparatus for enhancing the interest and excitement in a game of chance by incorporating a consecutive wins bet capability, the selection of which is totally at the whim of and under control of a player. The relevant casino or legal gaming establishment will determine the number of consecutive wins to be offered to the betting public.

Still another object of the present invention is to provide novel method and apparatus for enhancing the interest and excitement in a game of chance through the incorporation of a side bet capability permitting a player to select a variable number of consecutive wins and wherein the game of chance may include anyone of blackjack, craps, roulette, baccarat, five card stud, poker, low ball poker played either at a table or video or other types of slot machines.

Still another object of the present invention is to provide novel method and apparatus for enhancing the interest and excitement in a game of chance through the incorporation of a betting capability permitting a player to select a variable

number of consecutive wins and wherein the game of chance may include anyone of blackjack, craps, roulette, baccarat, five card stud, poker, low ball poker played either at a table or video or other types of slot machines.

Still another object of the present invention is to provide novel method and apparatus which integrates a side bet capability into a game of chance and which includes providing each player with a display of the number of consecutive wins selected, the amount bet, the number of consecutive wins attained by the player and the payoff amount as a function of the number of consecutive wins displayed and the amount of a bet.

Still another object of the present invention is to provide novel method and apparatus for integrating a side bet capability into a game of chance which utilizes a chip receptacle for receiving and covering chips bet in a consecutive win side bet with a transparent cover to provide an constant, observable reminder of the amount bet and provide a secure system to prevent player dishonest and/or player/dealer collusion by eliminating any opportunity to add or remove chips during play.

Still another object of the present invention is to provide a consecutive wins betting capability in a game of chance in which means are provided to prevent a payoff amount and/or number of consecutive wins selected to be changed once selected to prevent player dishonest and/or player/dealer collusion.

Still another object of the present invention is to provide novel method and apparatus for integrating a side bet capability into a game of chance and which utilizes a chip receptacle for

retaining chips therein during the number of plays occurring over a side bet period and for uncovering and dispensing the covered chips upon either the successful completion of a selected number of consecutive wins or a loss occurring before the number of consecutive wins is achieved.

Still another object of the present invention is to provide a novel method and apparatus for integrating a side bet capability into a game of chance played on a slot machine or video game.

Still another object of the present invention is to provide novel method and apparatus for integrating a side bet capability into a game of chance presided over by a dealer and in which the design of the system is such as to minimize the added functions performed by a dealer due to the integration of the side bet capability into the game of chance.

BRIEF DESCRIPTION OF THE FIGURES

The above as well as other objects of the present invention will become apparent when reading the accompanying description and drawings in which:

Figure 1 is a plan view of a side bet layout for a single player which is designed in accordance with the principles of the present invention and further showing the manner in which the players side bet unit interfaces with the dealers game begin button.

Figure 1a is a block diagram of the controller means for operating each betting unit of the type shown in Figure 1.

Figure 1b is a plan view showing an alternative arrangement of the unit of Figure 1.

Figure 1c shows the positions to which the keyswitch of Figure 1b can be set.

Figure 2a shows a top plan view of the electromechanical mechanism utilized to operate the chip receptacle forming part of a player's side bet unit as shown in Figure 1.

Figure 2b shows a view of the portion of the mechanism shown in Figure 2a looking in the direction of arrows 2b-2b.

Figure 2c shows a top plan view of the chip receptacle portion of the player's side bet unit of Figures 1 and 2a, showing a manner in which the presence and value of a chip is determined.

Figure 2d shows a portion of the player's side bet unit of Figure 2a looking in the direction of arrows 2d-2d.

Figures 3a-3d show various stages of the chip "elevator" mechanism incorporated into the player's side bet unit of Figures 2a-2d.

Figure 4 shows an exploded perspective view of the chip elevator, chip holder, and glass cover plate to further clarify the operation thereof.

Figures 5a-5h are simplified views showing various stages of the chip receptacle, chip elevator and transparent cover plate and which is useful in explaining the sequence of operation thereof.

Figure 6a shows a simplified circuit diagram of the chip detection/denomination circuitry.

Figure 6b shows a plurality of groups of waveforms useful in explaining the operation of the circuitry of Figure 6a.

Figures 7-10 shows views of other games embodying the side bet system of the present invention.

DETAILED DESCRIPTION OF THE INVENTION AND PREFERRED EMBODIMENTS THEREOF

Figure 1 shows a plan view of the side bet layout 10 embodying the principles of the present invention. The side bet layout 10 may be employed in any one of a variety of different games of chance such as for example, blackjack.

Making reference to copending application Serial No. 08/391,051 which is incorporated herein by reference thereto, a blackjack table layout is shown in Figure 1 thereof, reference being made thereto for purposes of brevity. In place of the touch screen computer interface 22 shown therein, each player's position 12 is provided with a rectangle 15 at which a player's side bet unit 20 is located.

For the sake of simplicity, only one player's side bet unit is shown in Figure 1, it being understood that a plurality of such side bet units are provided, one for each player's position 12.

Each side bet unit 20 is coupled to a common power supply 12 and a dealer's game beginning button 14, the power supply 12 and dealer's game begin button 14 being coupled to each other player's side bet unit through the connections as shown.

Since all of the player's side bet units are identical in both design and function, only one unit, namely, the unit 20 of Figure 1, will be described herein in detail.

The side bet unit 20 includes a chip receptacle 22 and a key operated LCD (or LED) display unit 24 comprised of a payoff display 26 an amount bet display 28, a number of consecutive wins display 30 and a number of consecutive wins selected display 32 as well as a game in progress display 34 and a ready to play display 36.

Each side unit bet 20 is further provided with "+" and "-" push buttons 38 and 40 as well as a Push key 42 and a Loss key 44.

A player's side bet unit 20, briefly, operates in the following manner:

Prior to the play of a new game and assuming that a player is not already engaged in a consecutive win side bet, chip receptacle 22 is open for the receipt of up to four chips of any denomination. The player at side bet unit 20 selects the number of consecutive wins by operating buttons 38 and 40 to respectively either increase the number or decrease the number of consecutive wins selected, which is displayed at 32.

It being understood that a player is also obliged to place a wager on the game itself preparatory to beginning a play and assuming that all of said wagers of the players at the table have been completed, the dealer presses the game begin button 14 causing the chips in the receptacle 22 to be lowered and a transparent cover to seal the receptacle, preventing removal of the chips while at the same time permitting their unobstructed observation.

As an alternative, the relevant casino may choose to allow the side bet without the player making the conventional bet. If so, the player is

dealt cards as if he had made the conventional bet. The "side bet" then becomes the only bet.

The ready to play display 36 which need only be a backlit panel having the words "READY TO PLAY" imprinted or otherwise provided thereon and which is illuminated when a previous game has been completed, and the transparent cover is removed from the chip receptacle turns off when the dealer's game button 14 is depressed. Display 34 which may also be simply a backlighted panel that lights up to indicate that the game is in progress. Presuming that this is the start of the first game at which the player has made a consecutive win side bet, display 30 will read "0" while display 32 displays a number of consecutive wins selected by the player. The payoff display indicates the payoff, which is a function of the number of consecutive wins selected and the amount bet. As soon as the dealer's game button 14 is depressed, the microprocessor controlling side bet unit 20 locks out keys 38 and 40, which keys remain locked out until either the number of consecutive wins in display 32 is achieved or in the event that there is an intervening loss of a game prior to reaching the number of consecutive wins selected. The transparent cover is also placed over the chip receptacle.

The play of the blackjack game proceeds in a conventional manner, players winning being paid off while the chips of losing players are removed from the table by the dealer.

The dealer presses the Loss button 44 of the player's side bet unit in the event that the player has lost a game. If the number of consecutive wins has not been achieved because a loss occurs, the microprocessor associated with the

player's side bet unit 20 terminates the side bet, uncovers the chip receptacle 22 and elevates those chips in the receptacle to a level above the table to permit their removal.

Assuming that a player at side bet unit 20 has won a hand, upon occurrence of the play of the next game which is initiated by each player providing a wager for the game, the dealer operates the game begin button 14 which automatically advances the number of consecutive wins presented in display 30, however, if the dealer has pressed the Push button 42 because the totals of the dealer and player hands are equal, the number of consecutive wins presented in display 30 will not increase after the game begin button 14 has been pressed by the dealer. As indicated above, the relevant casino may include a rule that the player wins the "Push" or tie. If so the Push button 42 is removed, ignored or disconnected from the controller and payoffs of consecutive wins are reduced to incorporate the statistical advantage otherwise given to the player. The subsequent games are played in a similar manner.

Assuming that the player at unit 20 has achieved the selected number of consecutive wins, the microprocessor associated therewith will present the same numbers in display 30 and 32 and simultaneously therewith will provide, by means of either an alarm or a visual means or both, that a side bet has been won. For example, an audible alarm can be accompanied by flashing one, more than one or all of the displays on the side bet unit. Depending upon the amount and depending upon whether a tax I.D. number is required, the payoff will be performed either at the game table or at a separate payoff station within the casino.

A limited access female receptacle 46 which may receive a male plug of a hand-held unit (not shown) carried by the supervisor or other like personnel, may be plugged into female receptacle 46 in the event that an error has occurred. For example, assuming that a player has won a hand and the Loss button 46 or Push button 42 is accidentally depressed, a supervisor may then be called over to rectify the situation by plugging in the male plug of the portable unit carried by the supervisor to permit resetting of the side bet unit 20 to indicate the proper number of wins and the number of selected wins as well as the payoff number. The payoff amount and number of selected consecutive wins cannot be changed, however.

The controller as shown in Figure 1a which may include a microprocessor MPU, random access memory RAM, read-only memory ROM, push button unit PB and display driver DSPLYDR for driving the Display, is provided with a port P for receiving a male plug of a portable remote unit PMPU for transferring data collected in memory, such as RAM, of all transactions per 8-hour shift, per dealer's shift, etc. to evaluate profitability, efficiency, etc. As an alternative or in addition to, port P at switch LSW which is normally locked and requires a key held by a supervisory is opened (i.e. turned on) to cause the MPU to display the total number of games, total amount of bet, and total amount paid out; for each game, the consecutive wins selected, the amount of bet of each game, the payoff of each win and number of games played before loss; and the serial number of the system.

Once all of the numbers have been captured, the registers will be set to zero. The

date and time will be maintained in the hand-held device PMPU and will be appended to the record downloaded from a unit 20. These records, now stored, in the hand-held device, may be downloaded

5   to a separate computer system for analysis and reporting.

Figure 1c shows an electrical connector 46 and a key switch 47 selectively moveable to the positions shown in Figure 1d. Either or both of

10   these could be used. In the case of the key switch, the relevant numbers could be displayed on the displays on the system and controlled by the + and - buttons. The numbers are observed and manually recorded, as set forth above. The key switch is

15   also used for resetting the system if an error in play occurred such as an inadvertent push of the Loss button. The pit boss would only have to carry a key rather than a more bulky hand-held electronic device. The switch LSW (Figure 1a) is closed when

20   the key is moved to the data read-out position shown in Figure 1c.

Figures 2a-2d show the chip receptacle and the operating mechanism therefor in greater detail.

Chip receptacle 22 is comprised of a motor

25   47 having a worm 48 mounted upon its output shaft 47a. The shaft of motor 47 extends in the opposite direction and through an opening in one wall of an enclosure 49 housing motor 47 as well as the other components of side bet unit 20, the shaft portion

30   47b being provided to receive a hand crank (not shown for purposes of simplicity) to manually operate the chip receptacle in the event of a power failure or the like.

Worm 48 meshes with a worm gear 50 adapted

35   to rotate about the vertical axis of shaft 51 which

is freewheelingly mounted within appropriate openings of a pair of arms of a substantially C-shaped support 52 by means of bearings 53 and 54. Worm gear 50 is secured to shaft 51 by a set screw 50b provided in integral collar 50a of worm gear 50.

A cam 55 is also mounted upon shaft 51 and is secured thereto by a set screw 55b provided in integral collar 55a of cam 55. A push rod 56 is slidably mounted within a bore 58a provided within a supporting block 58.

A cam follower 57 has a tapered portion thereof slidably engaging the periphery of cam 55. Cam follower 57 extends into a bore 56a within push rod 56. A spring 59 arranged within bore 56a pushes against the right-hand end of cam follower 57 which provides a resilient mount therefore.

The right-hand end of push rod 56 (see Figure 2d) bears against a "knee" formed between a pair of H-shaped levers 60, 61 which are joined at the aforesaid "knee" by a pin 62, as shown. The right-hand end of H-shaped member 61 is swingably mounted to a bearing block 63 for movably supporting the chip elevator shaft 64 which extends through bores 63a and 63b provided in bearing block 63. The swingable mount between lever 61 and bearing block 63 comprises a pair of pivot pins 65a, 65b arranged on opposite sides of bearing block 63 (pin 65b being obscured from view in Figure 2d).

Upper H-shaped lever 60 is secured to the elevator shaft 64 by pivot pin 66.

A platform 64a, which is integrally joined to the upper end of shaft 64, presses against the elevator platform 67 selectively raising and lowering same.

The lower end of bearing block 63 has a projection 63c which extends in an opening within a floor 49b of enclosure 49.

Elevator platform 67 is shown in greater detail in Figure 4 and is comprised of a substantially planar support sheet 67a having integrally joined thereto, such as, for example, by an epoxy or suitable adhesive or glue, a plurality of disc-shaped projections 67b through 67e adapted to selectively extend through openings 68a-68d, respectively provided within a chip holder member 68. A glass or transparent plastic plate 69 is slidably moveable over chip holder 68 and is arranged to be carried by a supporting frame 70 guided by a pair of guide rods 74 and 75 arranged in spaced parallel fashion as shown in Figures 2a and 2b. Frame 70 has an inwardly directed flange 70a as shown in Figures 2a and 2b. Notches 69a and 69b provided in transparent member 69 rest on flanges 70a, 70b as shown in Figure 2b. Frame 70 is provided with a pair of hollow cylindrical sleeves 72, 73 which slidably receive elongated guide rod 74. A third hollow sleeve 75 slidably receives a shorter guide rod 76 (see Figure 2a).

A drive arm 77 (Figures 2a and 2d) has one end thereof fixedly secured to the upper end of shaft 51. A drive pin 77a is secured to the opposite end of drive arm 77 and rides within an elongated groove 78 in carrier 70 groove which has a straight portion 78a joined with two contiguous curved portions 78b, 78c. The operation of the chip receptacle mechanism is as follows:

Platform 67 (see Figure 2c) has a plurality of central openings 67b-1 through 67e-1 and a plurality of arcuate openings 67b-2 through

67e-2. The central openings cooperate with presence sensors (to be more fully described) to detect the presence of a chip. The arcuate-shaped openings cooperate with denomination sensors (to be more fully described) to detect chip color and hence chip denomination. Initially, the window 69 is opened, as shown in Figure 5a. One or more chips are placed in the chip receptacle and more specifically within openings 68a through 68d. Figure 5a shows a chip C being lowered into the chip receptacle. Figure 5b shows two chips positioned within the chip receptacle. When the elevator platform 67 is in the position shown in Figures 5a and 5b the "READY TO PLAY" display 36 is illuminated.

The amount of the bet is presented in display 28 shown in Figure 1.

The "+" and "-" buttons 38 and 40 are selectively operated to select the number of consecutive wins desired by the player.

A game is begun by pushing the dealer's game begin button 14 causing the buttons 38 and 40 to be isolated and disabled from operation until the number of consecutive wins selected is reached or in the event of an intervening losing game.

Operation of the dealer's game begin button energizes motor 47. With the chip receptacle in the open position, motor 47 rotates counterclockwise causing drive pin 77a, driven through shaft 47a, worm gear 48 and worm gear 50 and shaft 51, to rotate counterclockwise, as shown by arrow A in Figure 2a. The counterclockwise rotation begins at about "one o'clock" in Figure 2a which initially causes drive pin 77a to move along curved recess portion 78c. During this time the carrier 70 does not move. However, the cam 55 is rotated

causing the chip elevator to be lowered to receive chips and to provide clearance for the carrier 70 and window 69. Further, rotation causes drive pin 77a to move in the leftward direction along the

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linear portion 78a of guide groove 78 causing the carrier frame 70 and hence the transparent window 69 to move in the direction shown by arrow B.

Figure 3b shows the position of cam 55 at the moment in which chips are being received. It

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should be noted that the nose of cam follower 57 is positioned to engage a notch in the surface of cam 55 whereby push rod 56 moves to the left sufficiently to enable the knee of levers 60 and 61 to move to the left, thereby lowering the end of

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lever 60 and hence lowering the elevator shaft 64. The springs S between the engaging surfaces of chip elevator 67 and chip holder 68 assure the downward movement of chip elevator 67, dropping the chips C below the Playing Table Surface PTS.

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As the motor continues its rotation, cam 55 moves to the position shown in Figure 3c whereby the nose of the cam follower 57 and push rod 56 move further to the left relative to Figure 3b, causing elevator shaft 64 to move downwardly to the lower-

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most position shown in Figure 3c whereby the chip elevator platform and chip holder 68, as well as the chips C, move downwardly. This position is also shown in Figure 5c.

As was pointed out hereinabove, the drive

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pin 77a which is moving the transparent member frame 70, moves frames 70 so that it is immediately above the chip holder 68 and chip elevator 67. This position is shown in Figure 5d as well as Figure 3c.

As carrier frame 70 moves in the direction

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shown by arrow B, pin 77a moves towards the left-

hand end of the linear section 78a of groove 78 and when the arm 77 reaches a "nine o'clock" position, pin 77a moves from the right to the left. When drive pin 77a is in the "six o'clock" position (relative to Figure 2a), drive pin 77a, which continues to move counterclockwise, enters into the curved recess portion 78b and moves out of this recess. The carrier 70 is not moved during the time that drive pin 77a is in curved recess 78c.

Substantially simultaneously therewith, i.e. during the time that the drive pin 77a is in the curved section 78b, the nose of cam follower 57 engages the portion of the cam 55 as shown in Figure 3d which causes push rod 56 to be moved toward the right which causes elevator shaft 64, platform 64a, chip elevator 67 and chip holder 68 to be lifted upwardly to the position shown in Figure 3d, lifting the glass cover plate 69 upwardly from its position resting upon the support flanges 70a, 70b and so that its upper notched region 69c engages the cooperating notches N in the Playing Table Surface PTS so that the central portion 69c of cover 69 projects through Glass Opening GO which receives the central portion 69c, thereby locking the glass cover into position preventing the glass cover from movement in a horizontal direction due to the fact that the marginal portions of the Glass Openings engages all four sides of the central portion 69c and further preventing any movement in the vertical direction due to the fact that elevator shaft 64 and supporting platform 64a maintains the chip elevator 67, chip holder 68 and glass member 69 in the covering position with cover 69 pressed against lip L of the portion of the table surrounding cover 69.

Figure 5d shows the position occupied by the glass cover 69 preparatory to being locked into position. Figure 5e shows the elevated position in which the top surface of the glass cover plate is flush with the Playing Table Surface PTS. In this position, although the chips cannot be disturbed, the chips can be viewed throughout the entire time required to play the number of consecutive wins selected by the player.

In the event that a player who has selected a given consecutive win experiences a losing hand, the dealer presses the Loss button 44 of that player's unit 20, causing the motor 47 to be energized and to be rotated in a reverse direction which cause drive rod 77 and drive pin 77a to move in the clockwise direction. Drive pin 77a enters into curved portion 78c of recess 78 and eventually moves into the linear portion 78a thereof. When the drive pin 77a is in curved section 78c, the carrier does not move. However, the cam 55 is rotating at this time. As the drive arm 77 moves in the clockwise direction from the "six o'clock" position to the "nine o'clock position" relative to Figure 2a, drive pin 77a moves towards the left-hand end of groove 78. Prior to movement of the carrier frame 70, i.e. when drive pin 77a is in the curved recess 78c (from about the "five o'clock" position to the "six o'clock" position) cam 55 moves from the position shown in Figure 3d through the position shown in Figure 3c, dropping the chip elevator 67 and chip holder 68 downwardly, causing the glass panel 69 to be lowered from the locked position shown, for example, in Figure 3d so that the glass plate 69 is now resting upon the support flange of carrier frame 70.

As drive pin 77a moves from the "six o'clock" position toward the "twelve o'clock" position of Figure 2a, the carrier 70 and glass plate 69 are moved from the position immediately above the chip receptacle to the position fully displaced from the chip receptacle as shown in Figure 2a, frame 70 occupying the solid line position shown therein.

The drive pin thereafter moves from the "twelve o'clock" position to approximately the "one o'clock" position moving along curved groove 78c, which movement is required to move cam 55 to the position shown in Figure 3a causing the push rod 56 to be moved to the right, lifting chip elevator 67 and chip holder 68 to the position shown in Figure 3a so that chips C are elevated above the Playing Table Surface PTS and can be easily swept away by the dealer.

Figure 5f shows members 67, 68 and 69 being lowered, Figure 5g shows the glass cover 69 moved to the right after members 67 and 68 have been lowered to provide clearance for movement of glass plate 69, while Figure 5h shows the members 67 and 68 in the raised positioned in which chips C are arranged above the Playing Table Surface PTS to be easily and readily removed by the operator.

Figure 6a shows further details of the chip detection and chip denomination sensors. A typical chip is shown in Figure 6a as having a white colored central portion surrounded by a band of a given color or striped radial (i.e. "spoke-like") bands of different colors. Detection of the presence of a chip is obtained through the use of light emitting diode D1 and light sensitive diode D2.

Incident light from diode D1 is reflected from the bottom surface of a chip, when a chip is present, causing reflected light to be picked up by diode D2.

D1 is caused to turn on and off at 31.25 kHz. The output of D2 is coupled to a band-pass filter which only passes a signal having a frequency of 31.25 kHz, to distinguish the received signal from any and all ambient light sources such as lighting used in a gaming casino (light bulbs, fluorescent bulbs, etc.), a flashlight or any other light source.

A denomination of a detected chip is determined through the use of light emitting diodes D3, D4, and D5 and light sensitive diode D6. A digital output from the microprocessor controlling a side bet unit, such as 20, energizes the diodes D3 through D5 in a sequential fashion. The diodes may either emit yellow, green or red colored light or alternatively may be a light source emitting white light and having a transparent or white, green and red filter, respectively positioned between each of the white light generating diodes D3, D4 and D5 and the chip. Alternatively, other color combinations and colored light sensors may be employed without departing from the scope of the present invention, simply by using light emitting devices of different colors or different colored filters with white light sources.

The microprocessor or computer controls the sequence of closing of switches SWD, SWE and SWF for selectively coupling power across each of the diodes. The coupling sequence is shown in Figure 6b by the waveform groups 81 through 84 which are respectively provided to describe the manner in

which red, white, green and black chips, or a combination thereof, are detected.

Considering the waveform group 81, switch SWD is closed to generate constant width square pulses at t_0, $t_0 + T$, $t_0 + 2T$ and so forth as shown by waveform 81a, T being a constant. Similarly, switch SWE generates constant width square pulses at t_1, $t_1 + T$, $t_1 + 2T$, etc. as shown by waveform 81b. In a similar fashion, switch SWD is closed causing light emitting diode D5 to generate constant width square pulses at time t_2, $t_2 + T$, $t_2 + 2T$ and so forth. When light of a red wavelength is detected by sensing diode D6, an output is generated at times t_0, $t_0 + T$, $t_0 + T$ and so forth, as shown by waveform 81d.

Waveform groups 82 and 83 respectively detect the presence of a white band on the chip when light is detected at time t_2, $t_2 + T$, $t_2 + 2T$ and so forth. A green chip is detected when an output signal is provided at the amplifier AMPC at times t_1, $t_1 + T$, $t_1 + 2T$ and so forth.

When the chip having a black color band is present, detecting diode D6 fails to detect the presence of light in the red, green or white wavelength which is detected as the presence of a black chip. This information is utilized to determine the denomination of each chip. The sensors of each chip position are sequentially read and the denominations are totalled. The microprocessor multiplies the total amount bet by the odds based on the consecutive wins selected and displays the result as the payoff.

The output from the photodiode is connected through the amplifier to an analog to digital A/D converter within the computer so that the adjustments can be made within the software for compensating for color variations, etc. Assuming

that a $100.00 chip having colored "spokes" is placed within one of the chip receiving recesses, the microprocessor will receive signals from all of the colors. By measuring the amplitudes of the signals and processing these signals in the software, an accurate determination of the chip can be made. False readings due to ambient conditions are eliminated by disabling the value detection system until the chip detection system has determined that the chip is properly placed in a chip recess.

It should be understood that switches SWC, SWD, SWE and SWF are common to all light sources for all four chip receiving depressions. The modulator which generates the red, white and green pulses is likewise common to all four of the sets of light sources associated with each chip recess of the chip detection system.

The push key 42 shown in Figure 1 is optional and may be provided in those applications wherein a tie occurs, i.e. when a player and a dealer have hands totalling the same amount, which amount is no greater than twenty-one (21)).

In applications where a "Push" is considered to be a win, the push key 42 may be eliminated or ignored.

As an alterative to the chip receptacle, chips may be placed in a chip slot and fall by gravity into a protected container arranged beneath the table. As each chip is placed in the slot, it is examined for presence and denomination.

Alternatively, chips returned by the chip receptacle may be swept into a hopper or container (not shown) arranged beneath the table and communicating with the Playing Table Surface PTS by a slot SL. The chips are swept from the chip receptacle and into the slot SL provided and fall

into the hopper when a player loses his side bet or when a payoff is to occur at a remote location.

Although the embodiment described hereinabove incorporates the consecutive wins side bet units into a blackjack game, it should be understood that the side bet system and the units thereof may be employed in all other games of chance played at tables such as roulette, craps, poker, mini-baccarat, etc. The consecutive win side bet system may be very easily integrated into poker games played at a table regardless of whether the game is five card stud or low hand poker challenge (as well as other poker games) as will be described hereinbelow in greater detail. The consecutive wins payoff and bet options listed below represent the payoff for all table games, slot machines or video games.

When integrated into a craps game consecutive wins may be limited to the number of consecutive times a player wins. Other bets such as the number of consecutive times a player throws a particular number can be employed as another possible side bet.

When integrated into a roulette game, consecutive wins may be limited to the number of consecutive times the player correctly selects an odd bet or an even bet, a black bet or a red bet. Copending application Serial No. 08/396,051 describes additional bet switches to be used to indicate to the system whether an odd, even, red or black bet is selected by the player as shown in Figure 3 thereof which depicts a roulette layout. The touch screen is replaced in the bet unit 20 shown in Figure 1 of the present application.

The side bet system may be utilized in a slot machine or a video game wherein the unit may either be integrated into the machine housing or

positioned immediately adjacent thereto and the electrically connected with the game operating circuitry.

For example, in a video blackjack slot machine which simulates a dealer and player playing head to head, one or more chips may be arranged within the chip receptacle or coins or tokens may be deposited directly into the machine either in the same receptacle receiving a coin or token for initiating play of a game or in a separate coin or token slot and then a number of consecutive wins is selected by the operator. As each play is completed, a signal indicating a winning play increments the consecutive wins display 30 (see Figure 1). When the number of consecutive wins in display 30 equals the number of consecutive wins selected and presented by display 32, all of the lights on the display panel flash, preferably accompanied by an audible alarm to indicate a payoff. The payoff may be derived either from the video slot machine or a central payoff window. Suitable video games with which the bet unit 20 may be interfaced may, for example, be Live Video Poker, Live Video Roulette and Live Video Craps produced by ICGA and Aces and Faces produced by IGT. However, any other video game may be utilized, if desired.

Figure 7 shows a low hand poker challenge table game in which the side bet system of the present invention is integrated. The low hand poker challenge operates as follows:

Player Procedures:

Player selects one of thirteen consecutive bet options listed under Payoff Rules as previously described under blackjack. All other procedures before the game begins are the same as blackjack. Whether the game is a table game, a video game, or

a slot machine, the casino determines the number of
bet options which may be selected.

Dealer gives each player and himself one
card at a time, dealing left to right until all five
cards are dealt.   The cards are dealt face down.
The Dealer exposes his cards one at a time after the
Players have seen their cards.   The lowest hand of
the dealer or player wins as described hereinbelow.

A bet unit 20 (see Figure 1) is provided
adjacent to each player as in blackjack; however,
there will not be a conventional bet as in blackjack
- only the consecutive wins bet.

Payoff Rules:

2 consecutive wins pays	4 for 1	
3 consecutive wins pays	7 for 1	
4 consecutive wins pays	15 for 1	
5 consecutive wins pays	30 for 1	
6 consecutive wins pays	60 for 1	
7 consecutive wins pays	120 for 1	
8 consecutive wins pays	240 for 1	
9 consecutive wins pays	480 for 1	
10 consecutive wins pays	960 for 1	
11 consecutive wins pays	1920 for 1	
12 consecutive wins pays	3840 for 1	
13 consecutive wins pays	7680 for 1	
14 consecutive wins pays	15,360 for 1	

Rules:

The lowest possible hand is a 7, 5, 4, 3,
2 of mixed suits; and

Poker hands in order of lowest to highest:
no pair, one pair, two pair, three of a kind,
straight flush, full house, four of a kind, and
straight.

No Pair: The smallest denomination card
wins.   If player - dealer have the same highest
card, or, same two highest cards, or same three
highest cards, or same four highest cards, the next

card determines the winner. If all five cards are the same, there is no winner and the game is delayed.

One Pair: If player - dealer have One Pair (two cards of the same numerical value), the lowest value pair wins. If both player - dealer have a pair of the same value, the lowest third, fourth (if necessary), or fifth (if necessary) lowest card determines the winner.

Two Pair: If player - dealer hands consist of Two Pairs, the lower of the two pairs wins. If player - dealer lowest pair is the same, the second lowest pair determines the winner. If player - dealer have the same two pairs, the lowest odd card determines the winner.

Three of a Kind: If player - dealer have Three of a Kind, the lowest numerical value three cards of the same denomination wins.

Straight: the lowest of five cards that run in numerical order with a mixture of suits wins, if player - dealer both have a Straight.

Flush: if all five cards are the same suit, the player or dealer has a Flush. If both have flushes, the smallest denomination cards win as in No Pair.

Full House: a combination of Three of a Kind a A Pair is a Full House. The lowest numerical value Three of a Kind wins, if both player and dealer have Full House.

Four of a Kind: the lowest numerical value four cards of the same denomination wins, if both player and dealer have Four of a Kind.

Straight Flush: the lowest value cards that run in numerical order and are the same suit wins, if both player and dealer have a Straight Flush.

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Figure 8 shows a low-hand poker slot challenge game. The operation of the game and machine is as follows:

Player Procedures:

Insert bills, coins or tokens into slot 92 of machine 90, representing amount of bet.

Select one of thirteen consecutive bet options (listed under payoff) by operating button (or buttons) 91.

Selection cannot be changed once made as was described hereinabove.

After handle 92 is pulled, or a button pushed, if casino so desires, dealer's five cards and player's five cards are shown on machine screen, one at a time. Player's first card appears, followed by the dealer's first card, which is followed by player's second card, etc.

The rules as described hereinabove for low hand poker apply here.

Displays:

LCD Screen located on front of machine will show payoff (28):

Dollar amount of bet once placed (28);

Consecutive win selection (32); and

Number of consecutive wins (30), consecutive win number reverts to zero if player loses.

Figure 9 shows the manner in which the side bet system and units of the present invention are integrated into a five card stud challenge game.

Player Procedures:

Chips ($1, $5, $25, $100) placed into the chip receptacle 20 (see Figure 1) by player up to a maximum to be determined by casino.

Player selects one of thirteen consecutive bet options listed under Payoff Rules by pressing relevant buttons 38 or 40 (see Figure 1).

Once placed, bets cannot be changed.

Dealer Procedures:

Dealer operates start game button 14 (see Figure 1). Each players' consecutive wins display 30 is incremented under player loses whereupon Loss button 44 is pressed.

Dealer will give each player and himself one card at a time, dealing left to right until all five cards are dealt. The cards are dealt face down. The dealer will expose his cards one at time after the players have seen their cards.

Displays:

LCD Screens show:

dollar amount of bet once placed (28);

consecutive number of wins (30); and

selected number of consecutive wins (32).

When player loses, light in consecutive bet selection button and LCD screen turns off and chips are uncovered and removed.

Payoff Rules:

2 consecutive wins pays	4 for 1
3 consecutive wins pays	7 for 1
4 consecutive wins pays	15 for 1
5 consecutive wins pays	30 for 1
6 consecutive wins pays	60 for 1
7 consecutive wins pays	120 for 1
8 consecutive wins pays	240 for 1
9 consecutive wins pays	480 for 1
10 consecutive wins pays	960 for 1
11 consecutive wins pays	1920 for 1
12 consecutive wins pays	2840 for 1
13 consecutive wins pays	7680 for 1
14 consecutive wins pays	15,360 for 1

Rules:

The highest possible hand is the combination of Ace, King, Queen, Jack, and Ten of the same suit.

Poker hands in order of highest to lowest: Straight Flush, Four of a Kind, Full House, Flush, Straight, Three of a Kind, Two Pair, One Pair and No Pair.

Straight Flush: the highest value five cards that run in numerical order and are of the same suit wins, if both player and dealer have a Straight Flush.

Four of a Kind: the highest numerical value four cards of the same denomination wins, if both player and dealer have Four of a Kind.

Full House: a combination of Three of a Kind, and A Pair is a Full House. The highest numerical value Three of a Kind wins, if both Player and Dealer have a Full House.

Flush: If all five cards are of the same suit, the Player or Dealer has a Flush. If both Flushes, the highest denomination cards win as described below under No Pair.

Straight: the highest five cards that run in numerical order with a mixture of suits wins, if player and dealer both have a Straight.

Three of a Kind: if player and dealer both have Three of a Kind, the highest numerical value three cards of the same denomination wins.

Two Pair: if player and dealer hands consist of Two Pairs (cards of the same numerical value), the highest value pair wins. If both player and dealer highest pair is the same, the second highest pair determines the winner. If player and dealer have the same two pairs, the highest fifth card determines the winner.

One Pair: If both player and dealer have One Pair, the highest pair wins. If both player and dealer have a pair of the same value, the highest third, fourth (if necessary) or fifth (if necessary) highest card determined the winner.

No Pair: the highest denomination card wins. If player and dealer have the same highest card, or same two highest cards, or same three highest cards, or same four highest cards, the next highest card determines the winner. If all five cards are the same, there is no winner and the game is replayed.

Figure 10 shows a five card stud slot challenge game. The operation of the game and machine is as follows:

Player Procedures:

Insert bills, coins or tokens representing amount of bet.

Select one of thirteen consecutive bet options (listed under payoff) by operating the buttons 38, 40 (see Figure 1).

Selection cannot be changed once made.

After handle 101 is pulled (or button pressed), dealer's five cards and player's five cards will show on machine screen 102, one at a time. Player's first card is followed by dealer's first card, etc.

The rules described hereinabove in the five card stud table game apply here.

The payoff rules are the same as previously described for the various poker games and all other table games and video games.

Special Displays:

Payoff (26);

Amount of bet (28);

consecutive win selection (30); and

number of consecutive wins (38). Consecutive win number reverts to zero if player loses. Player selects amount of bet, bet option and insert bills/coins in order to begin new bet cycle.

A latitude of modification, change and substitution is intended in the foregoing

disclosure, and in some instances, some features of the invention will be employed without a corresponding use of other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein described.

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